UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,244	07/11/2003	Shinya Narumi	2271/69840	4620

7590 05/31/2007

Ivan S. Kavrukov, Esq.
Cooper & Dunham LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER
GOMA, TAWFIK A

ART UNIT	PAPER NUMBER
2627	

MAIL DATE	DELIVERY MODE
05/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/618,244	NARUMI ET AL.	
	Examiner	Art Unit	
	Tawfik Goma	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the RCE filed on 3/12/2007

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2 and 4-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al (US Patent 6580684) in view of Mimnagh (US 5835642) and further in view of Iwasaki et al (US 5740149).

Regarding claim 1, Miyake et al (US Patent 680684) disclose an optical information recording medium (figs. 1-5), comprising: a transparent substrate having one of concentric-circle guide grooves and a spiral guide groove (col. 9 lines 59-61); and a phase-change recording layer (col. 11 lines 6-20), on the transparent substrate, which generates a phase-change by being exposed to a laser beam which emission is controlled at where recording marks and spaces between the recording marks (col. 11 lines 19-24) both having duration "nT", in which "n" expresses nonnegative integer, and "T" expresses a reference clock period (col. 8 lines 21-29 and fig. 54), are to be marked, using Pulse Width modulation (fig. 54), so as to record, erase, and rewrite information (CD-RW, fig. 54), wherein the optical information recording medium has recording conditional information pre-formatted thereon (fig. 13), which includes parameters of a plurality of multi-pulse patterns having applied linear velocity ranges and information regarding linear velocities capable of recording with each of the multi-pulse

patterns (Erasing/Recording power ratio and rate, fig. 13 and col. 12 lines 32-37), and the multi-pulse patterns are combinations of a heating pulse (Pwr, fig. 54) and a cooling pulse (Pwc, fig. 54), which specify a light emission waveform of the laser beam (fig. 54). Although Miyake discloses adjusting the multi-pulse patterns based on the velocity used during recording (col. 28 lines 56-60 and fig. 54), and discloses a range of velocities and corresponding power parameters for all of the multi-pulse patterns pre-formatted on the disk (Max and Min CLV/ Additional Information 2, fig. 13), Miyake fails to disclose *different* linear velocity ranges for each of the plurality of multi-pulse patterns included in the pre-formatted information. In the same field of endeavor, Mimnagh discloses an information carrier with pre-formatted information including different velocity ranges for each of a plurality of multi-pulse patterns (col. 4 lines 43-50 and 56-64). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the pre-formatted information of Miyake by providing different recording velocity ranges for a plurality of multi-pulse patterns as taught by Mimnagh. The rationale is as follows: One of ordinary skill in the art would have been motivated to provide different recording velocities for a plurality of multi-pulses in order to apply a proper multi-pulse pattern at a recording velocity that deviates from a nominal recording velocity (col. 4 lines 19-47 and col. 3 lines 58-61).

Further regarding claim 1, Miyake in view of Mimnagh fail to disclose wherein one of the multi-pulse patterns is a 1T and another one of the multi-pulse patterns is a 2T cycle. In the same field of endeavor, Iwasaki discloses a multi-pulse pattern wherein a 1T pattern and a 2T pattern (X, fig. 1 and col. 3 lines 63-67 thru col. 4 lines 1-19 and fig. 15). It would have been obvious that the pulse patterns used can be both a 1T and a 2T cycle depending on the

characteristics of the medium. The rationale is as follows: It is obvious that both a 1T and 2T multi-pulse pattern are used in order to adjust the pulse widths to correspond to the characteristics of the recording medium and control the heat accumulation and dissipation (see Miyake col. 34 lines 14-19). Miyake discloses that the characteristics corresponding to the recording material are read throughout the disc and can be different (col. 4 lines 55-65), and these characteristics are used to control the multi-pulse width.

Regarding claim 2, Miyake further discloses wherein the conditional information further includes parameters of test recording corresponding to each of the multi-pulse patterns (col. 17 lines 43-52). Miyake discloses a target power for lowest and highest recording velocity as well as erasing/recording rate at those velocities. The test recording adjusts the power until the target is reached. Furthermore, Mimnagh discloses a trial writing corresponding to the multi-pulse patterns (s4, fig. 6 and col. 6 lines 17-20).

Regarding claim 4, the recording velocity is selected and set prior to adjusting the multi-pulse pattern in Iwasaki, and therefore it would be fixed during the 1T pulses.

Regarding claim 5, Miyake further discloses wherein the recording conditional information is encoded with a wobble of the guide groove (col. 12, 32-37).

Regarding claim 6, Miyake further discloses wherein the wobble information is encoded using a frequency modulation of the wobble (col. 11 lines 66-67 thru col. 12 lines 1-3)

Regarding claim 7, Miyake further discloses wherein the wobble information is encoded using a phase modulation of the wobble (col. 12 lines 22-31)

Regarding claim 8, Miyake further discloses wherein the recording conditional information is encoded in a lead-area on the optical information recording medium (col. 2 lines 50-60).

Regarding claim 9, Miyake further discloses wherein the recoding conditional information is encoded in one of a part on the inner radius side of an information recording area and a part on an inner radius side of a test recording area, on the optical information recording medium (Lead-in, fig. 55). Figure 55 shows the lead-in area, which contains the conditional information, is recorded on an inner radius side of a program area.

Regarding claim 10, Miyake further discloses wherein the recording conditional information is encoded in one of a part on an outer radius side of an information recording area and outer radius side of a lead-out area, and a part on outer radius side of a outer peripheral part of a test recording area, on the optical information recording medium (fig. 55, fig. 47). Figures 47 and 55 show that the lead-in area which contains the conditional information can be located on an outer radius side of a outer peripheral part of a test recording area and of both a program area and lead out area.

Regarding claim 11, Miyake further discloses wherein the recording conditional information is encoded in a part of an information recording area, on the optical information recording medium (col. 2 lines 40-44).

Regarding claim 12, Miyake further discloses wherein the recording conditional information is written as code in a part of a surface of the optical recording medium (col. 2 lines 40-44 and col. 11 lines 19-24). Miyake discloses that subcode data is recorded on the recording

layer, which is on a surface of the recording medium. Furthermore, Mimnagh discloses a barcode for carrying the velocity related information (col. 4 lines 13-18)

Regarding claim 13, Miyake in view of Mimnagh discloses everything regarding the recording medium (see claim 1 above). Miyake further discloses reading the pre-formatted recording conditional information (F202, fig. 50), comparing the conditional information from the disc with recording conditional information of the optical information recording apparatus regarding performances including recordable linear velocity (fig. 37 and col. 23 lines 54-67). Miyake compares the bit pattern read for the disc with a table stored in the apparatus to correlate the information on the disc with that stored in the apparatus as well as comparing the velocity with a reference velocity of the apparatus and outputting an adjustment error signal (col. 27 lines 55-60). Miyake further discloses selecting a recording conditional information satisfying a desired optimum condition based on the result of comparing (F203, fig. 50 and col. 4 lines 31-44) and generating a multi-pulse pattern used for specifying a light emission waveform of a laser beam (fig. 54 and col. 4 lines 31-35 and col. 28 lines 56-60). Mimnagh also discloses selecting recording conditional information satisfying the optimum condition as a result of a comparison with a reference velocity (col. 4 lines 48-54) and generating a multi-pulse pattern based on the selected information (col. 4 lines 59-64). The rationale for combining Miyake and Mimnagh follows as in claim 1 above.

Further regarding claim 13, Miyake in view of Mimnagh fail to disclose wherein one of the multi-pulse patterns is a 1T and another one of the multi-pulse patterns is a 2T cycle. In the same field of endeavor, Iwasaki discloses a multi-pulse pattern wherein a 1T pattern and a 2T pattern (X, fig. 1 and col. 3 lines 63-67 thru col. 4 lines 1-19 and fig. 15). It would have been

obvious that the pulse patterns used can be both a 1T and a 2T cycle depending on the characteristics of the medium. The rationale is as follows: It is obvious that both a 1T and 2T multi-pulse pattern are used in order to adjust the pulse widths to correspond to the characteristics of the recording medium and control the heat accumulation and dissipation (see Miyake col. 34 lines 14-19). Miyake discloses that the characteristics corresponding to the recording material are read throughout the disc and can be different (col. 4 lines 55-65), and these characteristics are used to control the multi-pulse width.

Regarding claims 14 and 15, Miyake further discloses performing a test recording onto the optical information recording medium based on parameters of the test recording which is also pre-formatted as the recording conditional information (col. 17 lines 43-52), corresponding to the generated multi-pulse pattern, so as to determine emission power of the heating pulse in accordance with the result thereof (col. 28 lines 66-67 thru col. 29 lines 1-5). Furthermore, Mimnagh also discloses a trial writing corresponding to the multi-pulse patterns (s4, fig. 6 and col. 6 lines 17-20)

Regarding claim 16, Miyake further discloses a method for determining a recording condition according to claim 13, wherein the desired optimum condition is a condition realizing the highest linear velocity among recordable conditions selected based on the result of comparing (fig. 13 and col. 27 lines 55-60). The selected velocity is the highest velocity possible for the media type, and the SPE is used to set the recording velocity based on the selected velocity.

Regarding claim 17, Miyake further discloses wherein the desired optimum condition is a condition realizing the highest linear velocity among recordable conditions selected based on

the result of comparing, with a specific multi-pulse pattern (col. 27 lines 55-60). The pulse pattern in the combination of Miyake and Mimnagh would be set and used to record information prior to the comparing of the velocity with the reference velocity and adjusting using the error signal.

Regarding claim 18, Miyake further discloses wherein the desired optimum condition is any recordable condition selected based on the result of comparing, with a specific linear velocity (col. 28 lines 56-60).

Regarding claim 19, Miyake further discloses wherein the desired optimum condition is a condition realizing the highest stability among recordable conditions selected based on the result of comparing (col. 28 lines 56-60).

Apparatus claims 20-26 are drawn to the apparatus corresponding to the method of using same as claimed in claims 13-19. Therefore, apparatus claims 20-26 correspond to method claims 13-19, and are rejected for the same reasons of obviousness as applied above.

Claims 20-26 have limitations similar to those treated in the above rejection(s), and are met by the references as discussed above. Claim 20 however recites the following limitations, which are further disclosed by Miyake: a rotation controller (6, fig. 48), a light source (4, fig. 48), a light source driver (18, fig. 48), a reader (23, fig. 48), a comparing mechanism (10, 21, fig. 48), a selecting mechanism (10, fig. 48), a pulse pattern generator (21, fig. 48), an emission waveform controller (19, 21, fig. 48), and a speed controller (17, fig. 48).

Further regarding claims 21, and 22, Miyake and Mimnagh disclose test recording and determination as discussed above (see claims 14-15 above). Miyake's apparatus inherently contains mechanisms to perform the functions disclosed.

Regarding claim 27, Miyake in view of Mimnagh and Iwasaki disclose everything regarding the apparatus (see claims 13 and 20 above) and the format of the recording medium (see claim 1 above). Miyake further discloses that the apparatus is an information processing apparatus (col. 7 lines 32-55).

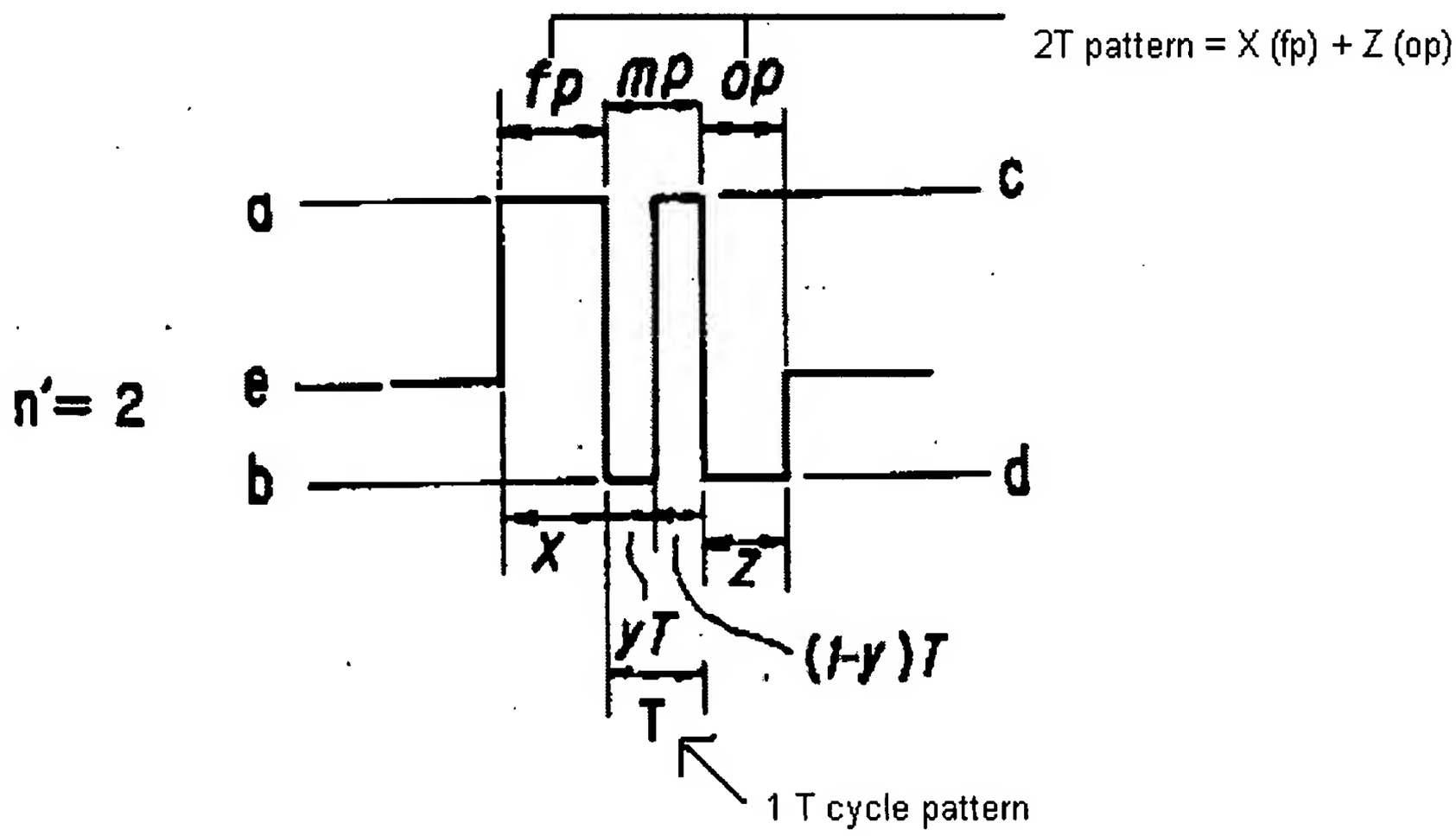
Regarding claim 28, Iwasaki further discloses a first linear velocity range for a 1T cycle pattern and a second liner velocity range for a 2T cycle pattern (col. 8 lines 34-52).

Regarding claim 29, Iwasaki further discloses wherein the recording conditional parameters include parameters for a 1T pattern and a second set of parameters for a 2T cycle pattern (col. 8 lines 34-52 and figs. 1a-1d).

Response to Arguments

Applicant's arguments filed 3/12/2007have been fully considered but they are not persuasive.

Regarding applicant's arguments that Iwasaki fails to disclose a 2T pattern, this argument is not persuasive because Iwasaki does disclose wherein a combination of the heating pulse pattern and the cooling pulse can be a 2T pattern. Iwasaki discloses wherein the multipulse patterns can be different combinations of heating and cooling pulse lengths that satisfy the inequalities $0.5T \leq X \leq 2T$, $0.4 \leq Y \leq 0.6$ and $0.5T \leq Z \leq 1T$, and a multipulse pattern appears at $y(n-n')$ times in total wherein n and n' are integers and $n' \leq n$. Therefore, the combination of a 1T pattern and 2T pattern is clearly within the ranges disclosed. As an example, fig. 1 C reproduced below shows the combination of a 1T multipulse pattern (mp) and a 2T pulse pattern that includes a front pulse (fp) and an end pulse (op).



Finally, Iwasaki also discloses wherein n can equal n', effectively eliminating the multipulse pattern. As such, if X+Z = 2T, which is disclosed by the ranges of Iwasaki, then a 2T pulse pattern exists. Iwasaki also discloses in figure 15 wherein X = 1.5 T and Z = 0.5 T, which is a 2T pulse pattern.

Conclusion

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tawfik Goma/
T. Goma
5/25/2007

WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600